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A new locality and the first record of juvenile specimens of the Sashed Catfish, *Galeichthys peruvianus* Lütken, 1874 (Pisces, Siluriformes, Ariidae), in northern Chile

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Abstract

We report the observation of two juvenile specimens of Sashed Catfish, *Galeichthys peruvianus* Lütken, 1874, south of Arica, Chile, which expands the current known distributional range of the species, by adding a previously unrecorded locality. The importance of the presence of breeding populations in the northern coast of Chile is discussed.

Keywords

Arica, Parinacota, breeding population, Ichthyofauna, Pacific coast

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Introduction

The Ariidae family is one of two families of the order Siluriformes, which are widely represented in marine waters. Most species of the family are widely distributed in tropical and temperate coastal continental waters, including estuarine regions and the lower portions of some coastal rivers. However, contrary to most species in the order, a few species are entirely restricted to marine habitats (Acero and Betancur-R. 2007; Alexandre and Menezes 2007; Marceniuk et al. 2012).

Galeichthys Valenciennes, 1840 is the sole genus of the Galeichthyinae, one of the two subfamilies of Ariidae (Betancur-R. and Armbruster 2009; Marceniuk et al. 2012) and comprises one species in the Eastern Pacific Ocean and three species restricted to southern Africa (Acero and Betancur-R. 2007). The American species likely arrived from Africa long after the breakup of Gondwana (Betancur-R. and Armbruster 2009).

Sashed Catfish, *Galeichthys peruvianus* Lütken, 1874, is a relatively common species with an apparently wide distribution on the Pacific coasts of the American continent, occurring mainly in the coast of Peru and central-northern Chile (Betancur-R. and Armbruster 2009) with additional records in Colombia (Alvarez-León, 2019), Mexico (Ruelas-Inzunza and Paez-Osuna 2007), and Ecuador (Bearez 1996). However, there is a lack of scholarly agreement on the distribution of *G. peruvianus*

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between Ecuador and Sinaloa, Mexico, due to the many uncertain records of this species in the area. For example, authors such as Acero (2004) indicated that *G. peruvianus* is a marine species strictly endemic to South America, occurring from northern Peru to Chile, and that it has been erroneously reported for Mexico (see Nelson et al. 2004). Furthermore, Kulongowski (2010) highlighted that records of *G. peruv*ianus occurring in Mexico and Panama (e.g. Meek and Hildebrand 1923) are rare and may potentially be based on hearsay rather than on accurate reports of the species. Kulongowski also considered that such records can result from misidentifications of *Arius seemanni* Günther, 1864 which resembles *G. peruvianus* in several external features. Nonetheless, records of *G. peruvianus* occurring from Ecuador to Mexico are numerous and have been made by several authors throughout the years ranging from the nineteenth to the twenty-first centuries in what seems to be an extensive distributional area for the species. Thus, to avoid overlooking these records, we distinguish the distributional area of the species from Ecuador to Mexico (Fig. 1, striped area) from records outside of this area in Peru and Chile, while acknowledging that distribution of this species needs further study.

The purpose of this paper is to fill gaps in the current knowledge of the distribution of *G. peruvianus* in northern Chile and to confirm the presence of breeding populations of the species there.

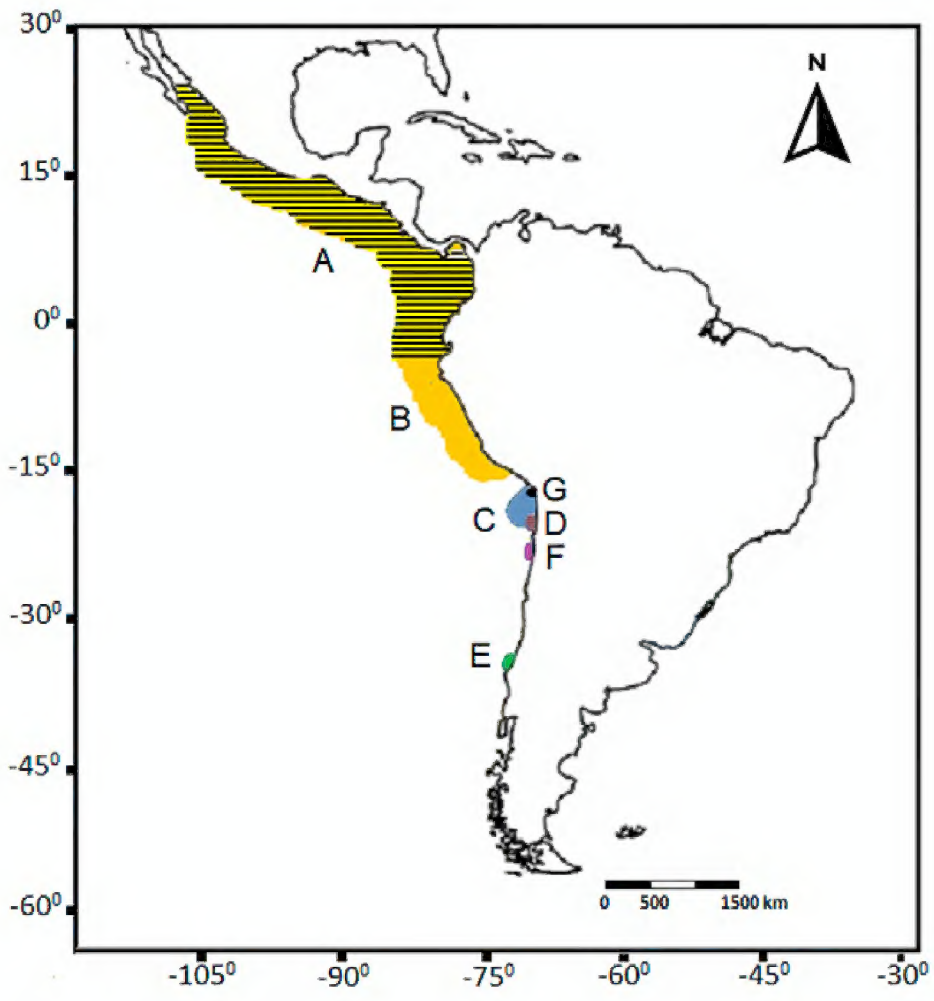

Figure 1. Distributional map of *Galeichthys peruvianus* along the Pacific coast of America showing historical records of the species for the Chilean territory and its new locality. A = Sinaloa, Mexico to Ecuador (cited by numerous authors, but in need of clarification). B = northern Peru to Ilo, southern Peru (Medina et al. 2004; Betancur-R and Armbruster 2009). C = northern Chilean coast (De Buen 1961; Bahamonde & Pequeño 1975). D = Iquique, Chile (Fuentes 1981; Bahamonde and Pequeño 1975). E = Ruiz and Villalba 1984. F = Cochlogüe, Chile (Méndez-Abarca 2011). G = Arica, Chile (new record herein).

Methods

The accidental catch of non-target fish species in fishing nets is relatively frequent. Within this context, on 20 March 2018, two juvenile specimens of *Galeichthys peruvianus* were accidentally collected in a handmade seine originally destined to capture anchovy. The capture nets were of the shore funnel type, with a total length of 12 m and a 10 mm mesh hole. Both specimens were collected south of the city of Arica in northern Chile. The fresh specimens were photographed with a Canon PowerShot SX60 HS camera and immediately preserved in 70% ethyl alcohol. The specimens were deposited at the Vida Salvaje "Museo Vivo" fish collection, part of the Fundación Reino Animal (Arica, Chile).

Results

***Galeichthys peruvianus* Lütken, 1874**

New record. CHILE • Arica, Arica province, Arica and Parinacota region (18.4746°S, 070.2894°W); 20 March 2018; accidentally caught in a shore funnel net 1.2 km offshore, 15 m depth; 2 juvenile specimens, sex undet.; COLICTSIL039FRA, total length 11.3 cm (Fig 2A) and COLICTSIL040FRA, total length 9.8 cm (Fig. 2B).

Identification. The identification of the specimens was based on the meristic and morphometric characteristics indicated by Chirichigno (1974), Fuentes (1981), and Medina et al. (2004). Body naked and without scales, robust, thick, and compressed towards the back. Head broad; mouth large; maxilla with a barbel and chin with a pair or more barbels. Eyes yellow. Colouration dark grey on the back and milky white on the belly; both colourations are present on the flanks to form stripes. Sides of the body with a conspicuous, silver band. Fins reddish orange. Dorsal and pectoral fin with a strong, serrated spine. Adipose fin behind the dorsal fin. Anal fin with 14–16 radiuses.

Discussion

In Chile there is a total of five records of *Galeichthys peruvianus* (Fig. 1). The first record was by De Buen (1961) and a subsequent record were by Bahamonde and Pequeño (1975), both along the northern coast of Chile. Additionally, Fuentes (1981) recorded this species at the northern city of Iquique, and Ruiz and Villalba (1984) recorded a single specimen near Cocholgüe, Concepción (36.5875°S, 072.9833°W), which is the southernmost known record of the species. The presence of this species at Cocholgüe is probably due to the El Niño event during the years 1982–1983 (Méndez-Abarca 2011, 2015). The fifth record of *G. peruvianus* on the Chilean coast was by Méndez-Abarca (2011), who reported it from Taltal Beach, Antofagasta, where a female specimen containing well-developed eggs was collected; this confirmed the presence of reproductive individuals in this region.

Figure 2. Lateral view of the two specimens of *Galeichthys peruvianus* collected offshore of Arica, Chile. Length of scale bar = 1 cm.

As our specimens are juveniles, we can now positively confirm the existence of breeding populations of *G. peruvianus* in Chilean coastal waters. The status of previous records of this species in Chilean waters can therefore now be considered as belonging to stable, reproductive populations, not as occasional vagrant individuals. The existence of breeding populations, and potential spawning and pre-spawning areas (e.g. Adams et al. 2019), enhances the importance of knowing the distribution of this species and including it as part of the Chilean fish fauna.

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Authors' Contributions

FM-A collected the specimens, identified the specimens, and wrote the manuscript; EAM reviewed the scientific literature, contributed to writing the manuscript, and translated it into English; RP-V assisted in writing the manuscript.

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